



ANNUAL REPORT

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Submitted to

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Acronyms and Abbreviations

ACDI/VOCA	Agricultural Cooperative Development International and Volunteers in Overseas Cooperative Assistance
CDP	Cooperative Development Program
CLARITY	Cooperative Law and Regulation Initiative
FG	Focus Group
FGD	Focus Group Discussion
HH	Household
KSH	Kenyan Shilling
METRICS	Measurements for Tracking Indicators of Cooperative Success
PM2	Performance Measurement and Management System
PMP	Performance Management Plan
PPP	Purchasing Power Parity
TANGO	Technical Assistance to NGOs International
UCCCU	Uganda Crane Creameries Cooperative Union
USAID	United States Agency for International Development
USD	United States Dollar
USH	Ugandan Shilling

CDP ANNUAL REPORT

The following annual report details Land O'Lakes CDP activities during January-December 2011. A semi-annual report was submitted in August 2011 that outlines the rigorous data collection activity. This report will focus on the events from July 2011-December 2011 with less emphasis on the events between January-June 2011 which are detailed in the semi-annual report submitted to USAID on July 31, 2011.

I. PROJECT SUMMARY

Land O'Lakes' Cooperative Development Project was designed to consider how East African dairy farmers are responding to the issues of increasing global demand for milk. Increased demand has spurred domestic and international competition for market share, requiring cooperatives to strengthen the many aspects of member engagement and improve processes throughout the business in order to compete effectively.

Development Challenge

The production and marketing of milk generates income and employment opportunities for millions worldwide and provides an important source of nutrition to women, children, and families/households. Dairy cooperatives in both developed and developing countries play a critical role in moving milk from farms to consumer markets. However, increasing global consumer demand for milk and dairy products is attracting both domestic and international competition for milk producers in dairy producing countries. This is especially seen in East African countries, which have a rich history and culture of keeping livestock and consuming milk. Dairy cooperatives not only have to compete with private sector processors, informal sector traders, and vendors in the marketplace, but they also compete with these same businesses for farmers' milk; there is competition on the supply and demand side. In response to this competition, a number of dairy cooperatives in developing countries have succeeded in horizontally and/or vertically integrating their operations to achieve scale, increase their competitive position in the marketplace, maximize returns to members, and engender member loyalty.

The CDP project is testing the development hypothesis that dairy cooperatives that achieve and leverage economies of scale through horizontal and/or vertical integration increase their commercial viability and competitiveness, and provide greater socio-economic returns to farmer-members, especially women farmers.

Intended Results

Our work will contribute directly to the achievement of CDP's Project Objective: *Increased access to self-reliant cooperative enterprises that meet the evolving needs of their members and contribute to improved quality of life for members, communities, and nations.* Land O'Lakes seeks to assist dairy cooperatives in East Africa to respond to evolving market conditions and increasing competition by achieving and sustaining economies of scale through horizontal and vertical integration. Achieving this objective has the added benefit of increasing the availability of highly nutritious milk and dairy products for consumers in countries with high rates of malnutrition.

The project has two primary indicators, one for cooperatives and one for cooperative members. The **primary indicator** to measure progress benefiting **cooperatives** is *change in sales revenue for participating cooperatives*. Our target is:

- **Revenues of participating integrated cooperatives increased by 25 percent**
(from US\$5.3m to US\$6.6m in Kenya; from US\$5.9m to US\$7.3m in Uganda)

Scale and integration will enable cooperatives to become and remain competitive in the marketplace and retain member loyalty by increasing socio-economic returns to members, particularly women. Our **primary indicator** and target for tracking benefits to **cooperative members** of scale and integration is:

- **Household net income of integrated cooperative members increased by 30 percent**
(sex disaggregated by female-headed households)

The Performance Management Plan (PMP), which outlines the indicators in greater detail, was submitted and approved in August 2011. The Performance Indicator Tracking Table can be found in Appendix A, and the Performance Progress Report can be found in Appendix B. A summary of Performance Management to date is outlined in Section VII.

Project Partners

Following is a description of each of the four participating cooperatives.

Lari Dairy Alliance, Ltd.

Lari, a federated dairy cooperative located 25 miles north of Nairobi, was formed in 2001. Lari, which markets its milk products under the brand name SUNDALE, has 5 member primary cooperatives and accepts milk from four non-member primary cooperatives. Since its inception Lari has had 6,040 farmer members, with 1,200 currently active. Lari raised the equity to invest in its 52,000 liters per day processing facility through a combination of primary cooperative contributions, farmer contributions and financing. Currently Lari collects, an average of 20,000 liters of milk per day, less than 40% of the plants processing capacity.

In March 2011, Lari Dairy Alliance received emergency support from the Land O'Lakes USAID funded Kenya Dairy Sector Competitiveness Project to engage with a consulting firm to assist with financial restructuring and a turn-around strategy required as the firm was experiencing both financial and economic distress. The CDP project is standing by to provide technical assistance as appropriate which may be in the form of guidance on unification strategies or equity structures. The CDP project is working closely with the KDSCP staff members who are taking the lead on this turn-around effort.

Limuru Dairy Farmers Cooperative Society, Ltd.

Limuru, a 49 year old a federated dairy cooperative, is located near Lari Dairy Alliance just outside of Nairobi. Limuru collects its milk from a single primary member cooperative which has 9,700 members, of which 6,000 members are currently active. The processing facility, Lari Milk Processors (LMP), markets its milk under the name LIMURU FRESH and is a wholly owned subsidiary, with Limuru Dairy Farmers Cooperative owning 52% and Limuru's farmer members owning 48%. Limuru currently collects an average of 30,000 liters of milk per day, 20% of which comes from non-member cooperatives, with the processing facility operating at 43% of its 70,000 liters per day capacity.

Meru Central Dairy Cooperative Union, Ltd.

Meru Central Dairy Cooperative Union is located near Mt. Kenya, 6 hours from Nairobi. Originally formed in 1967 as Meru Central Farmers' Cooperative, the organization became insolvent and was restructured in 2005 as a federated cooperative under its current name. Meru has 17 primary member cooperatives, 13 of which are active. Each member cooperative has between one and two thousand members, resulting in approximately 20,000 farmer members for Meru Central Dairy Cooperative. The processing plant, originally built in 1982 with equity capital from dairy and coffee returns, has a capacity of 100,000 liters per day. An average of 20,000 liters per day is currently being met by the farmer members. Meru currently has about two percent of the national milk market with its brand name MT KENYA. Nearly 60% of its milk products are being sold in Nairobi.

At the 2011 Annual Meeting a new board chair was voted into office. This dynamic individual is providing welcome leadership and vision to this high potential business. In November 2011 a professional manager was hired who appears well positioned to operationalize much of the technical support offered by the CDP project.

UCCCU (Uganda Crane Creameries Cooperative Union)

UCCCU, located 170 miles from Kampala in Mbarara, Uganda, is composed of eight member unions that bring together 103 primary cooperative societies throughout Southwest Uganda. UCCCU was formed in 2005 to create a milk marketing and processing system to defend against the dominant buyer in the region, Sameer. Currently there are 15,000 farmer members contributing milk to UCCCU. This milk is bulked at the constituent union level and then sold to Sameer. It is estimated that the milk production capacity across the eight UCCCU constituent unions is potentially 200,000 liters per day. UCCCU members have been contributing capital towards investment in a processing facility, and to date have generated 652,000 USD towards the construction of the facility. The facility is nearly complete, but still lacks processing equipment.

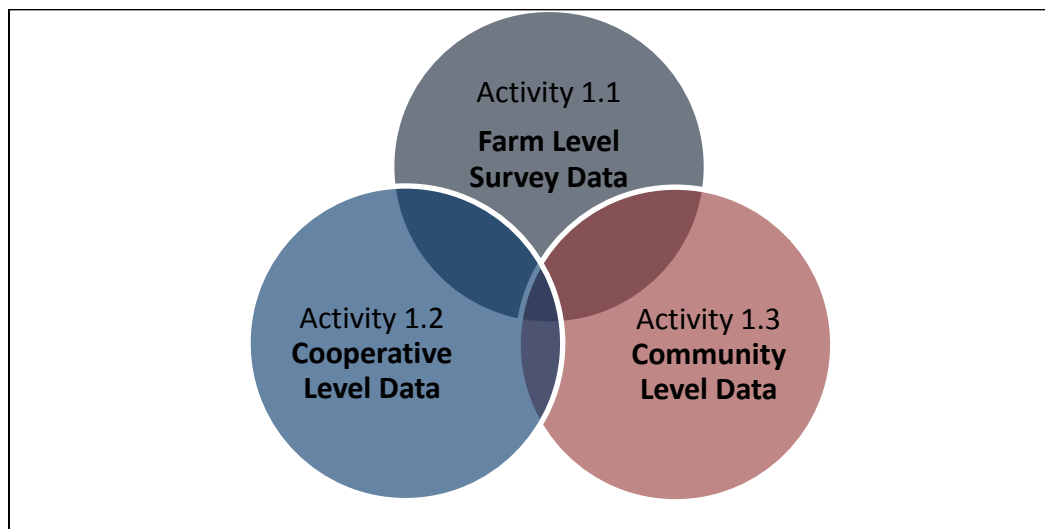


NTUNGAMO UNION: Trucks owned by the Ntungamo Cooperative Union. Photo by R. Savoie.

Progress in Activities by Project Phase

The project activities in the first year primarily contributed to the knowledge generation component of the project. This provided the opportunity to listen and learn broadly about the dairy farmers, and the choices they make about marketing, production, and management of their business. We also learned from the dairying community about their important and trusted relationships in local institutions. An important element of the knowledge generation activity is ensuring the cooperative partners have confidence that we understand and record the information from them correctly. The project conducted data validation workshops, validated the data collected, and developed an initial action plan with each of the business partners. The cooperative specific technical assistance will begin in 2012 as will the launch of the International Dairy Enterprise Alliance (IDEA) and the associated Learning Events.

Figure 1. Levels of Data Gathered



II. Phase One: Knowledge Generation

Knowledge Generation activities outlined below includes:

- Activity 1.1: Conduct farm-level assessment
- Activity 1.2: Conduct cooperative-level analyses (Analytics team)
- Activity 1.3: Conduct community-level qualitative survey (TANGO and others)
- Activity 1.4: Analyze and validate findings

The knowledge generation phase focused its data collection on four participating cooperatives (apex organizations) in Kenya and Uganda. Each of the four cooperatives were chosen as partners to the project because they had successfully undergone horizontal integration (group milk bulking to reduce costs and increase market power) and had begun, or significantly invested in, vertical integration (value addition and/or processing of milk).

Timeline of Activities

The following table outlines dates and participants for the activities described below.

Table 1. Key Activities to Date:

Date	Description	Participants	Location	Activity
January 2011	Cooperative-level assessment	Cooperative team, Rebecca Savoie, CDP team	Kenya, Uganda	1.2
January-February 2011	Farm-level assessment	TANGO team and local partners with support from Land O'Lakes	Kenya, Uganda	1.1
February 2011	Draft reports due from Cooperative assessment team and TANGO	Cooperative team, TANGO team, Land O'Lakes staff	Various	1.1, 1.2
March 2011	Review of data	Cooperative team, TANGO team, Land O'Lakes staff	Minnesota	1.1, 1.2, 1.3
March 2011	CDO Collaborative Meeting	Rebecca Savoie	Washington, DC	5.1,5.2,5.3
March-April 2011	Community-level assessment	TANGO, Land O'Lakes staff	Kenya, Uganda	1.3
May 2011	Presentation of data to cooperative business partners	Land O'Lakes staff	Kenya, Uganda	1.1, 1.2, 1.3
June 2011	Data validation	Consultants from cooperative assessment team, TANGO, Land O'Lakes staff	Kenya (Uganda business partners traveled to Kenya)	1.1, 1.2, 1.3, and 1.4 preliminary analysis
June 2011	CDO Collaborative Meeting	Rebecca Savoie	Washington, DC	5.1,5.2,5.3
July 2011	Action Planning	Consultants, Land O'Lakes staff	Kenya, Uganda	4.1
September 2011	CDO Collaborative Meeting – lead on IMPACT work – design CLARITY SOW (TZ)	Rebecca Savoie	Washington, DC	5.1,5.2,5.3
September 2011	Seminar: Land O'Lakes Dairy Development in East Africa	Rebecca Savoie, Lloyd Banwart ¹ , Consultants (Cook, O'Brien)	AgEcon, University of Missouri, Columbia, MO	3.1
October 2011	Training in PDA	Lloyd Banwart	Tucson, TZ	1.1 (technology)
November 2011	Collected additional data	Land O'Lakes staff	Kenya, Uganda	1.1,1.2,1.3
December 2011	CDO Collaborative Meeting – lead on IMPACT work	Rebecca Savoie	Washington, DC	5.1,5.2,5.3

¹ Lloyd Banwart is a Stevenson Center Fellow working on the Land O'Lakes CDP on an 11 month assignment working on qualitative and quantitative analysis of the baseline data.

Table 2. Project Update by Activity:

Land O'Lakes CDP Project Update by Activity	
Activity	Status
Activity 1.1 Conduct farm-level assessment	Complete
Activity 1.2 Conduct cooperative-level analyses	Complete
Activity 1.3 Conduct community-level qualitative survey	Complete
Activity 1.4 Analyze and validate findings	Underway
Activity 2.1 Develop Learning Platform	2012
Activity 2.2: Develop and leverage tools and resources	Underway and ongoing
Activity 2.3: Promote innovative technologies and services	Underway and ongoing
Activity 2.4 Engage with Members of the Learning Alliance	2012
Activity 3.1: Launch learning platform	2012
Activity 3.2: Launch learning alliance (IDEA)	2012
Activity 4.1 Individual Cooperative Evaluation and Action Planning	Complete
Activity 4.2 Increasing the Competitiveness of Integrated Cooperatives	Measure of impact will begin with 2012 semi annual report
Activity 4.3: Implement change strategies with cooperatives in expansion countries	2012
Activity 5.1 CLARITY	Underway and ongoing
Activity 5.2 METRICS	No current activity or plan for 2012
Activity 5.3 IMPACT	Underway

Activity 1.1: Conduct Farm-Level Assessment

An important element of the Land O'Lakes Cooperative Development Project was to collect household-level data that is sufficiently rigorous to describe with statistical significance the variance within the dairy community. This farm level data, when joined together with data sets from the community and cooperative level (Activities 1.2 and 1.3), will be used to develop diagnostic tools that will be tested, improved and disseminated throughout the course of this project. These tools will help dairy cooperatives understand those critical factors required for successful vertical and/or horizontal integration.



Field Researchers and Uganda Coordinator (right) November 2011. Photo by R. Savoie.

Sampling Strategy

The CDP project staff determined that the quantitative survey of dairy farmers should be undertaken at three dairy federations that are working with the project: Lari Alliance and Meru Central Cooperative Union in Kenya, and Uganda Crane Creameries Cooperative Union (UCCCU) in Uganda. It was determined that these three federations would provide a comprehensive assessment of the conditions of the federations in the two countries. Limuru was not included in the quantitative household survey as the data from Lari would sufficiently overlap. The questionnaire was developed with information about dairy farmers from a variety of sources including the questionnaire from the mid-term evaluation of the Bill & Melinda Gates Foundation-funded East Africa Dairy Development Project working in the dairy sector, and the USAID-funded Kenya Dairy Sector Competitiveness Project (KDSCP).

Additional Data Collection Rationale

The CDP team, in conjunction with consultants Dr. Michael Cook and Dr. David O'Brien, identified areas of the baseline data collection that would benefit from a supplemental data collection. The primary motivation of the supplemental baseline data collection is to provide information across a larger number of cooperative structures. Limuru is the only centralized cooperative in the baseline with a unique relationship between the cooperative and the

processor. The processing facility is a wholly owned subsidiary with ownership shared between the actual cooperative and individual members who have the opportunity to purchase shares in the processing company. The household survey was slightly expanded to include specific questions about the opportunity for investment in the processor.

Table 3. Number of Households Interviewed at Baseline

Number of Households Interviewed			
	Total HH interviewed	Coop Membership	
		Non-Members	Members
Limuru ²	288	144	144
Lari Alliance	1,366	674	692
Meru Central	1,354	649	705
UCCCU	1,315	640	675
Total sample	4,323	2,107	2,216

Sample Size: The sample size for the baseline was limited by logistical and financial resources, yet it is appropriate to draw sufficient farm and demographic information and be comparable to other sub-samples in the baseline data set. The sample size was designed so Uganda cooperative unions could be compared to Kenyan cooperative apexes. The Limuru supplemental data collection was, by design, comparable in size to the Ugandan cooperative Unions. In the original baseline data collection the three largest samples (of the eight unions) contain 212, 264, and 398 households. The supplemental data collection surveyed an additional 288 households, composed of both member and nonmember households.

Sample Design and Population Selection: The supplemental household data collection used the same sampling strategy and design as the original baseline data collection. This allowed for the data to be integrated into the current CDP quantitative database for analysis. The baseline data collection utilized a two stage random sample to efficiently manage the logistical costs of the data collection. Primary cooperatives were randomly selected from each of the apex cooperatives; this selection was weighted by the number of active members within each primary cooperative. From each of the randomly selected primary cooperatives, members were then randomly selected. A large primary cooperative was more likely to be chosen in the random primary cooperative random selection; however an individual farmer member within that cooperative was less likely to be selected. Within Limuru Dairy Cooperative Society randomly selecting primary cooperatives was not feasible because Limuru Dairy Cooperative Society contains one (1) primary cooperative. Therefore CDP chose to randomly select eight (8) of the thirty one (31) milk collection centers for the first stage of the random sample. This random sample was weighted by the number of active members contributing milk to each collection center. From each of the eight randomly selected milk collection centers 18 farmer members will be randomly selected.

² Household interviews for Limuru Dairy were completed in November of 2011 as part of a supplemental baseline data collection activity.

Activity 1.2: Conduct Cooperative-Level Analyses

The Cooperative Analysis team was mobilized in October 2010 to prepare to conduct in-country analytic work. The multi-disciplinary experts with a range of expertise, as summarized below:

- *Team leader* – Ms. Rebecca Savoie
- *Cooperative Governance*– Dr. Michael Cook
- *Markets and Financing Analyst* – Mr. David Neubert
- *Policy/legal analyst* – Mr. Paul Christ
- *Dairy value-chain specialist* – Mr. Rashmi Nagar
- *Sociologist (gender, conflict)* – Dr. David O'Brien

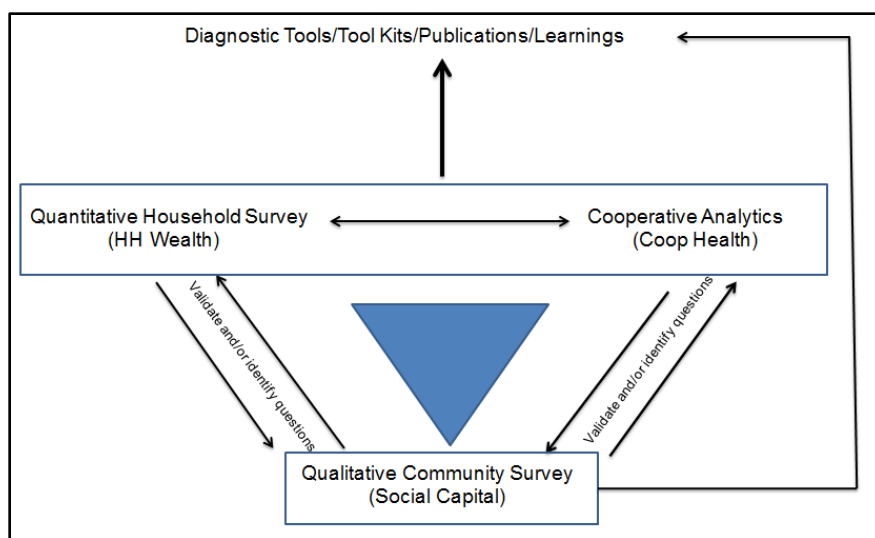
The Cooperative Analysis team identified key factors that influenced, enabled and/or hindered the formation and development of integrated dairy cooperatives. Their collective findings have evolved into a list of thematic from which future cooperative level analyses may be conducted. The thematic structure is still a work in progress and in Q1 of CY2012, the analytics team will dedicate time to creating a field-ready document.

During the data analysis, it was noted that the previous five mixed methods interviews consisted of three cooperative apex organizations from Kenya and two union cooperatives from Uganda. The analytics team identified value in collecting one additional union to complete the data and allow comparison between three top tier cooperative organizational structures from Kenya with three union structures (currently functioning as a top tier structure) from Uganda. In November 2011, the CDP team tested the mixed methods cooperative evaluation tool created by Dr. Michael Cook with the Ankole Dairy Farmers Union (ADAP). The tool is split into two sections. In the first section the cooperative union will have the opportunity to answer objective questions in advance of the CDP team's arrival. The second section allows for ADAP to review the types of open ended, subjective questions that the CDP team will be asking during the in person interviews. The field testing was valuable and numerous improvements were subsequently captured.

Activity 1.3: Conduct Community-Level Qualitative Survey

The purpose of the qualitative data is support the findings of the cooperative and household level data sets. The full team met in March 2011 to discuss gaps in the household and cooperative level data and determine how best to collect this information. Figure 1 shows the linkages between the baseline data collection activities. It was determined that a series of focus group activities would be designed including focus group discussion, Venn diagrams to explore trusted and important relationships that relate to dairying activities in a community, and income pies to determine sources of household income during the flush season vs. dry season, this year vs. five years ago.

Figure 1. Connecting the Data Sets



Focus Group Data Collection

The final stage of qualitative data collection was completed in Uganda in November 2011 and had two components. The first component was a topical outline, the second component focused on community trust/importance (Venn diagram) focus group discussions. These activities were originally scheduled to be completed during the baseline data collection; however circumstances during the baseline data collection prevented CDP from completing the focus group discussions in the Ntungamo Union. The specific components of each group who participated in the November data collection were purposefully selected to align, and offer comparison, to the focus group discussions previously completed collected in Busheyeni, ADAP and MBADFCU. The below table provides more details, grey shading represents focus group discussion completed in April, 2011. The bottom row, with no shading represent discussions focus groups completed in November, 2011.

Ntungamo

Topical Outline groups (four to be completed)

1. MALE - large farm - MEMBER
2. MALE - large farm - NONMEMBER
3. WOMEN - small farm - MEMBER
4. WOMEN - small farm - NONMEMBER

VENN diagrams -groups (two to be completed)

1. WOMEN - small farm - member
2. MEN - large farm - NONMEMBER

Union		FGD	FGD	FGD	FGD	VENN	VENN
BUDICU	Busheyeni Central	m-s-m	m-s-nm	w-l-m	w-l-nm	w-l-nm	m-l-m
ADAP	Rwemikoma	m-l-m	m-l-nm	w-l-m	w-l-nm	w-s-m	NA?

ADAP	Kazo	m-s-m	m-s-nm	w-l-m	w-s-nm	w-l-m	w-s-m
MBADFCU	Kashaka	m-s&l-m	w-l-m			w-s-nm	
NDAFCU	Ntungamo	M-l-M	M-l-NM	W-s-NM	W-s-NM	W-s-M	M-l-NM

Qualitative data was collected in April 2011 and November 2011 and includes a total of 102 separate focus group discussions:

- ❖ 52 Focus Group Discussions
 - Yielded 7,000+ unique responses to 51 Questions
- ❖ 26 Venn Diagram Exercises
 - Examines the important, trusted and influential relationships within dairy communities
- ❖ 24 Income Pie (Bean Counting) Exercises
 - Validate and support income and expenditure data from the Household Survey

Activity 1.4: Analyze and Validate Findings

Qualitative Data Analysis – Community Level:

The analysis of the focus group discussion alone included over 7000 unique responses collected in the qualitative data collection activities. Both thematic and content analysis were conducted, a labor intensive process that would allow for an output that would be useful to our cooperative management and leadership. The rigor of this process resulted in meaningful information that allows a deeper understanding of the complex social factors that go into business or household decision making. The respondents of the qualitative exercise include both members (50%) and non-members (50%). A comprehensive report will be prepared summarizing this 'customer satisfaction' information about membership and insight about marketing choices of non-members. The final output of this analysis is currently under review and will be presented to cooperative management in Q1 CY2012.

We have tested several methods for analyzing the Venn diagrams and will continue to use the results to support findings of the quantitative data. The feedback on this Venn diagram work has been very positive and we hope to continue learning how we can better evaluate the critical networks in a community that are enabling or disabling to dairy development. Similarly, the results of the income pie activities are useful in confirming the findings of the household quantitative data.

Mixed Method Analysis – Cooperative Level:

The output from the cooperative level analysis was the driver for the facilitated discussions that led to the cooperative specific action plans developed in July 2011. The action plans can be viewed in Appendix B1, B2, and B3. Note that an action plan was not developed for Lari due to their current business position which required a different level of support that could be offered by the CDP (turnaround strategy, load restructuring, etc.) the Land O'Lakes KDSCP project is providing this emergency assistance.

Quantitative Data Analysis – Household Level:

Many of our initial findings were highlighted in the semi-annual report submitted in July including numerous examples of descriptive statistics that describe, with significance, the differences and similarities between members and non-members, men and women, Kenya and Uganda, and between the three milk sheds – UCCCU, Lari, Meru.

Consolidated reports were prepared and shared with each cooperative that included the details of their membership and masked data for the others. The data source is rich and can be used to describe differences between the aforementioned groups in terms of:

- ❖ Current economic characteristics of dairy farmers
- ❖ Production patterns
- ❖ Marketing
- ❖ Economic return to dairying

The latter part of 2011, the CDP Stevenson Center Fellow, Lloyd Banwart, began working on economic modeling with the CD3 baseline data. Initial findings are revealing some very interesting results. For example, there seems to be a negative correlation between dairy training received and income from dairying activities (and milk production) for cooperative members. This may indicate that the quality of training, or the training topics, may not be useful to the farmer; perhaps delivery of training is not effective, etc. As we test the model to ensure the interpretation of these results are accurate, we will validate the information in the field and ensure it can be used by cooperative leadership to improve service provision to their members by private service providers, government, donors, or others leads to meaningful, positive growth. Early results also suggest there is a similar negative relationship between cooperative membership and income from dairying. These findings are currently being tested using various economic and econometric models. The outcome of the analysis and our mode for sharing this information with cooperative leaders and developers will likely be a focus of our semi-annual report for 2012. Please see Appendix E for the preliminary results from this research.

III. Phase Two: Knowledge Capture

Activity 2.1: Develop Learning Platform

CDP engaged a consultant to provide an assessment of online learning structures used in the industry that include effective mechanisms for engaging conversation from participants in rural areas. We will begin evaluating the format for the learning platform as we engage members of the International Dairy Enterprise Alliance to understand how we can fill a need identified within the industry. This will be an activity we will start in Year 2.

Activities 2.2: Leverage and Develop Tools and Resources

The CDP team is in the process of refining the tools used for data collection utilized during the CDP baseline data collection activity. It is the intention that the process can be replicated and adopted by other projects, with the benefit of our lessons learned and suggestions for process improvement. These tools include a financial evaluation tool, operations assessment tool, cooperative governance assessment, and a series of qualitative and quantitative tools (described above). The project team is taking great care to capture the process by which we modify or adopt each of these tools. The launch of IDEA in 2012 will result in a number of tools and resources being leveraged and developed in the coming

year.

Activities 2.3: Promote Innovative Technologies and Services

The baseline work did highlight the application of technology. Further work on the promotion of innovative technologies will be part of the cooperative specific technical support. Additionally, as the IDEA network grows, more technologies and services may become part of the CDP project. We may test some technologies with project funds, but will likely provide more cost analysis on the application of the technology. The project team already conducted a simple analysis around the installation of digital weighing scales, which has been shared with the cooperative partners.

Activity 2.4: Engage with Members of the Learning Alliance

There are currently 16 members who have teaming agreements with the IDEA Learning Alliance and the CDP team along with a select group of advisors and stakeholders are developing a series of key documents for IDEA including a vision statement and mission statement, as well as tentative work plan and draft strategic plan. These key documents will be refined as IDEA's purpose and value are better understood, but the feedback we receive is that existing documents are not sufficient in informing potential members about this opportunity.

IV. Phase Three: Knowledge Sharing

The first official event of the Learning Alliance (IDEA) is scheduled for February 2012 and will be hosted in partnership with CDP partner, CRI. We expect participation from representatives of 5-6 countries and expect to create a meaningful cooperative-to-cooperative platform. The invited guests will ideally become members of IDEA. Nearly 25 organizations (16 confirmed) have expressed interest in participating in the alliance. In the coming year, project staff will engage these and other partners to identify value of membership in IDEA, expectations of membership, and clarity of short, medium and long-term objectives.

The CDP team is developing a series of research papers that will connect the work of this project to the larger research community. The purpose is to ensure that the results of our project, starting with the process for our baseline, are subject to review by a range of professionals who may offer insight for improvement, apply the methodology, or connect us with similar projects. There are currently five abstracts in various stages of development, one has recently been submitted for a conference in June 2012 and can be viewed in Appendix C.

V. Phase Four: Knowledge Application

Activity 4.1: Individual Cooperative Evaluation and Action Planning

Action planning with each cooperative was conducted in July 2011. The process was the culmination of data collection, data sharing, validation and finally a session to determine how Land O'Lakes through CDP can best support our cooperative partners. The action

planning sessions were designed to provide an opportunity for each cooperative team provide the CDP feedback on what they view as the key capacity building items where CDP could provide technical assistance. The session was facilitated by capturing all comments and suggestions and in every case, for all three cooperative partners that participated in the action planning; the final action plan grew out from their perceived capacity needs supported by evidence of that need based on our baseline.

The kind of technical support that we will be providing Meru, for example, include:

1. Production Efficiency Analysis
2. Human Resource Review
3. Standard Operating Procedure Development
4. Change Management Framework Developed
5. Communication Strategy Developed
6. Cooperative Policy Environment Analysis

The detailed action plans for Meru, Limuru and UCCCU were submitted with the Land O'Lakes CDP Year 2 Workplan which was approved in October 2011.

Activity 4.2: Increasing the Competitiveness of Integrated Cooperatives

Will begin after action planning (Activity 4.1). Currently in the process of hiring a grant/contract manager to manage the process as well as a field based coordinator. The cooperative specific technical assistance is expected to begin in Q1/Q2 FY2012 once the staff members are onboard.

Activity 4.3: Implement Change Strategies with Cooperatives in Expansion Countries

The CDP project is designed to expand into countries where Land O'Lakes has existing operations to share office space. Expected expansion countries are Rwanda and Ethiopia, Land O'Lakes is awaiting news of large awards in both countries with startup expected in early CY2012. As early as possible, CDP staff will liaise with that new program management to identify how baseline indicators may overlap with those in the CDP Performance Management Plan.

VI. Collaborative Activities (5)

There are three initiatives that are co-funded by CDP award recipients. The collective system allows for targeted research, learning, sharing and dissemination of key features of cooperative development programming that impact all CDP recipients in three key areas.

Activity 5.1: CLARITY

Land O'Lakes participates in the CLARITY and IMPACT working groups. CLARITY was featured at the ICA Annual Meeting in Cancun in November and reception was excellent. The CDP Partners are supporting Ed Potter in developing the next volume of work after the cooperative law assessment which will focus on advocacy. The ICA Meeting was a venue to learn there are volumes of work on cooperative advocacy and the CDOs are supportive of

moving forward with explores the existing information and adopting and developing frameworks for advocacy work.

ACDI/VOCA and Land O'Lakes are planning to collaborate on implementing the CLARITY scorecard in Tanzania. Ed Potter from ICMIF/Americas and Barbara Jones from CHF International have both used the scorecard and have been generous with their time in helping us improve the process. A draft SOW has been developed and we are currently identifying a Tanzanian lawyer to conduct the analysis, supported by a US-based lawyer.

Activity 5.2: METRICS

Land O'Lakes has not used the METRICS tool although John Mellor, the consultant who did much of work on the METRICS tool, has been a valuable resource on the IMPACT work. The CDOs are evaluating how to move forward with METRICS and funds may be reallocated.

Activity 5.3: IMPACT

The activity called IMPACT is meant to assess the scope and determine the practicality of beginning basic and applied research for a comparative analysis of how cooperatives perform vis-à-vis other forms of business. Land O'Lakes is an active member of the IMPACT working group and is participating in the research under the RFP, "Cooperative Enterprise Impacts and Economic Benefits Research Project." Results from this work are expected in June 2012.

VII. Project Performance

Project Staff: In May 2011, Lloyd Banwart, a Fellow with the Stevenson Center at Illinois State University began his 11 month fellowship with the project. He has led the data cleaning, management, and economic and econometric modeling of the dataset. His contribution to the project has been invaluable and he has been the primary point of contact with our project consultant, Dr. David O'Brien, reviewing findings and preparing research papers that will be published and available for a wide audience to view, review and comment. Lloyd's Fellowship with Land O'Lakes ends in April 2012.

During the first year of the project it became evident that adjustments to the organizational chart would be required in order to ensure a high quality project work with lowest possible administrative costs. A part-time contract manager based in East Africa will be hired in early 2012 to manage the consultants and service providers who will be providing the technical support to the cooperatives. This person will ensure we have a standard process for identifying, selecting and managing consultants. As well as manage the technical review process to ensure that all deliverables are satisfactory.

A full-time Project Coordinator, based in Kenya, will also be hired in early 2012. The nature of this project requires excellent information from each of the cooperative partners which requires a high level of trust and evidence of support. The US-based Project Manager had been championing this activity, and once, hired, this individual will be the primary point of contact for our cooperative partners, which will become a more critical role as we look to expanding into two additional countries in Year 3.

Reports: Project Performance Report and the Performance Indicator Tables can be viewed in Appendices. Because the primary activity during this first year of the project was largely the baseline, data validation, action planning, and analysis, we did not expect to have the ability to account for substantial changes in our firm or household indicators. As per our PMP, we will look forward to seeing our project progress captured in Year 2.

Evaluation: As per the Cooperative Agreement, a mid-term evaluation will be conducted, and the expected timeline for this work in September 2012. Organizational best practices here at Land O'Lakes are to plan for this activity a minimum of six months ahead and the M&E team will prepare the initial documents for this work in February and the Project Manager has begun initial discussions with Keystone Accountability, the likely vendor for the Kenya-based mid-term.

The goal of the mid-term evaluation is to provide the team feedback about the project model and design which we will capture and note as we hope to have replicable or adaptable elements of our project made available to other cooperative development projects.

Certain indicators will be monitored and reported as part of the mid-term evaluation as detailed in the Performance Monitoring Plan.

APPENDICES

Appendix A: Performance Data Table

Impacts					
Performance Indicator	Baseline Value (2011)	Year 1		Cumulative/ progressive Actual	Comments
		Cumulative Annual Target	Actual (FY 2010/11)		
Household net income of integrated cooperative members increased by 30%	232.91	5%	N/A	N/A	Net income is the total household earnings by the cooperative. The baseline figure was calculated using the monthly median income in USD for individual households with cooperative member(s). The program has been collecting data during the first year of the project and rolling out of the activities expected to pick up in the next period. This outcome indicator will be measured during the final evaluation.
Revenues of participating cooperatives increased by 25% ³	UCCCU (\$0) Meru(\$2,030,711) Limuru (\$3,658,250) Lari (\$2,397,339)	5%	N/A	N/A	Net revenue is the surplus of gross revenue from the sale of quality milk less the cost of producing that milk. The program is yet to roll out its main activities and better results will be reported in the next period. The program has started developing the

³ Annual milk sales revenue

Impacts					
Performance Indicator	Baseline Value (2011)	Year 1		Cumulative/ progressive Actual	Comments
		Cumulative Annual Target	Actual (FY 2010/11)		
					capacity of various cooperatives. This outcome indicator will be measured during the final evaluation.
Result 1.1: Increased socio-economic benefits to members					
Number of cooperative members accessing and utilizing 3 or more member services offered by their cooperative	53%	56%	53%	53%	The program has arranged for the capacity building/training workshop that is intended to share ideas on good governance.
Milk production per cow (Liters/day)	7.6	8.0	7.6	7.6	Cooperative managers are being educated on farmer loyalty and benefits of input provision with respect to milk production.
Income from dairying as a percent of total household income	32%	34%	32%	32%	Measures aimed at improving income from dairy yet to be put in place.
Result 1.2: Improved patronage by members of integrated cooperatives					
% change in volume of milk and dairy products sold by processors	57%	60%	57%	57%	
Percentage of members who have cited problems with their cooperative	56%	55%	56%		Information from baseline data.
Result 2.1: Improvements in cooperative governance and management capacity					
Percentage of active cooperative members to total coop members	52%	55%	52%		Will be reported as part of the mid-term evaluation.

Impacts					
Performance Indicator	Baseline Value (2011)	Year 1		Cumulative/ progressive Actual	Comments
		Cumulative Annual Target	Actual (FY 2010/11)		
Number of cooperatives that have moved improved one level on the PM2	0	1	0		The PM2 tool will be applied in Year 2/3
Percentage of members receiving dividends	0	0	N/A		
Result 2.2:3 Increased productivity and efficiency of integrated cooperatives					
Ratio of milk sales to payroll	13.1	13.8	13.1		Will be reported as part of the mid-term evaluation.
Ratio of fixed assets to milk sales	1.8	1.9	1.8		Will be reported as part of the mid-term evaluation.
Gross margin per liter of milk	\$0.065	4%	0		Will be reported as part of the mid-term evaluation.
Capacity utilization	40%	45%	40%		Will be reported as part of the mid-term evaluation.
Processing losses as a percent of processing cost	3.10%	3.00%	3.10%		Will be reported as part of the mid-term evaluation.
Result 3.1: Improved understanding of cooperative law and policies					
Percent of cooperatives with structures (bylaws, policies) in place that align to the cooperative legal requirements	N/A	10%	0		Will be reported as part of the mid-term evaluation.

Impacts					
Performance Indicator	Baseline Value (2011)	Year 1		Cumulative/ progressive Actual	Comments
		Cumulative Annual Target	Actual (FY 2010/11)		
Percentage of cooperatives with policies and laws reviewed and communicated to cooperative members	N/A	10%	0		Will be reported as part of the mid-term evaluation.
Result 3.2: IDEA partnerships and leveraged resources utilized					
Number of IDEA members using/contributing to the portal	0	0			
Diagnostic tools & resources accessed by cooperatives	0	2			
Funds leveraged by cooperatives	\$0	\$2.5M			
Number of IDEA members using/contributing to the portal	0	0			

Appendix B: Performance Plan Report

Submitted to USAID December 2011

Operational Plan Indicators	Indicator Type	Baseline	2011 Target	2011 Actual	2012 Target	2013 Target	2014 Target	Notes
2.4.1-1 Number of Civil Society Organizations using USG Assistance to Improve Internal Organizational Capacity	2.4.1-1	0	-	-	4	6	8	Adding TBD Expansion Countries in 2013.
4.5.1-7 Number of institutions/organizations undergoing capacity/competency assessments as a result of USG assistance	4.5.1-7	0	-	-	4	6	8	Adding TBD Expansion Countries in 2013.
4.5.1-8 Number of institutions/organizations undertaking capacity/competency strengthening as a result of USG assistance	4.5.1-8	0	-	-	4	6	8	Adding TBD Expansion Countries in 2013.
4.5.1-9 Number of policies/regulations/administrative procedures analyzed as a result of USG assistance	4.5.1-9	0	-	-	4	6	8	Adding TBD Expansion Countries in 2013.
4.5.2-11 Number of producers organizations, water users associations, trade and business associations, and community-based organizations (CBOs) receiving USG assistance	4.5.2-1	0	-	-	4	6	8	Adding TBD Expansion Countries in 2013.
4.5.2-13 Number of rural households benefiting directly from USG interventions	4.5.2-1	20,351	21,525	20,351	23,482	25,440	27,396	Total active members delivering milk to all the organizations working with the program
4.6.1-5 Number of institutions/organizations undertaking capacity/competency strengthening as a result of USG assistance	4.6.1-5	0	-	-	4	6	8	Adding TBD Expansion Countries in 2013.
Custom Project Indicators	Indicator Type	Baseline	2011 Target	2011 Actual	2012 Target	2013 Target	2014 Target	Notes
Household net income of integrated cooperative members by 30%	CUST	232.91	5%	0	10%	15%	20%	Net income is the total household earnings by the cooperative. The baseline figure was calculated using the monthly median income in USD for individual households with cooperative member(s). Outlier households, calculated as one standard deviation or more above the mean, were removed from the median estimation.
Revenues of participating cooperatives increased by 25%	CUST	UCCCU (\$0) Meru(\$2,030,711) Limuru(\$3,658,250) Lari (\$2,397,339)	5%	0	10%	15%	20%	Net revenue is the surplus of gross revenue from the sale of quality milk less the cost of producing that milk. Sales will include those by the cooperative/union to various markets

Number of cooperative members accessing and utilizing 3 or more member services offered by their cooperative	CUST	53%	56%	53%	59%	62%	65%	Mean of dairy producers regularly accessing/purchasing/receiving/utilizing three or more cooperative services, inputs, technologies, and management practices.
Milk production per cow (Liters/day)	CUST	7.6	8	7.6	8	9	10	Liters of milk per cow per day produced by member households. Productivity is defined as the average number of litres of milk production per cow per day over the lactation period of the cow, represented by averaging milk production for a cross-section of animals at a specific period (semi-annually) in the seasonal milk production cycle
Income from dairying as a percent of total household income	CUST	32%	34%	32%	36%	39%	42%	Median net income earned from dairy as a contribution to the total household income for the members of the cooperatives.
Volume of milk sold by members to the cooperative as a percent of total production at the household	CUST	57%	60%	57%	65%	70%	75%	Mean volume of total household milk production sold to the cooperative by members who cite their cooperative as their primary milk buyer
Percentage of members who have cited problems with their cooperative	CUST	56%	55%	56%	52%	49%	46%	Percentage of cooperative/union members citing any (one or more) type of problem with their cooperatives/union.
Custom Project Indicators (Continued)	Indicator Type	Baseline	2011 Target	2011 Actual	2012 Target	2013 Target	2014 Target	Notes
Percentage of active cooperative members to total coop members	CUST	52%	55%	52%	60%	65%	70%	Active members of the cooperative are those primary producers who are members of a particular cooperative and deliver their milk to that specific cooperative. The ratio of active members to total membership is a measure of member loyalty and satisfaction with the services received from the coop.
Number of cooperatives that have moved improved one level on the PM2	CUST	0	1	0	1	2	3	Cooperatives/unions showing an improvement in at least one of their organizational or operational capacities as measured by a Land O'Lakes assessment tool.
Percentage of members receiving dividends	CUST	0	0	0	10%	15%	20%	Mean percentage of active members receiving dividends (based on the fiscal year) from their cooperative.
Ratio of milk sales to payroll	CUST	13.1	13.8	13.1	14.5	15.2	15.8	Annual net milk sales divided by annual cooperative payroll (averaged across vertically integrated cooperative partners).
Ratio of fixed assets to milk sales	CUST	1.8	1.9	1.8	2	2.2	2.3	Annual milk sales divided by annual fixed capital (averaged across vertically integrated cooperative partners).

Gross margin per liter of milk	CUST	\$0.065	4%	0	15%	20%	25%	The total unit cost per liter of processed milk subtracted from the mean cooperative selling price per liter of processes milk (total annual sales revenue divided by the number annual number of liters produced). Averaged across vertically integrated cooperative partners.
Capacity utilization	CUST	40%	45%	40%	50%	55%	60%	Annual mean daily total of raw milk purchased as inputs by the cooperative divided by total daily (24 hour) capacity of the cooperative processing plant
Processing losses as a percent of processing cost	CUST	3.10%	3.00%	3.10%	2.50%	2.00%	1.50%	Processing losses as a percent of processing cost is milk loss (calculated by subtracting annual milk purchase volumes from annual sales volumes) divided by total annual volume of milk processed.
Percent of cooperatives with structures (bylaws, policies) in place that align to the cooperative legal requirements	CUST	N/A	10%	0	20%	30%	40%	Percentage of cooperatives that comply with established bylaws/policies to improve the governance and performance of the cooperatives.
Percentage of cooperatives with policies and laws reviewed and communicated to cooperative members	CUST	N/A	10%	0	20%	30%	50%	The number of cooperatives which have reviewed and communicated key policies and bylaws to their members to inform them of their rights and responsibilities as a cooperative member.
Number of IDEA members using/contributing to the portal	CUST	0	0	0	16	20	25	Number of IDEA members that use or contribute to the knowledge portal developed by the project to enhance their business activities.
Diagnostic tools & resources accessed by cooperatives	CUST	0	2	0	4	6	8	Number of diagnostic tools and resources developed by CDP to enhance household, management and leadership capabilities of current and future cooperative partners and members.
Funds leveraged by cooperatives	CUST	\$0	\$2.5M	\$0	5M	\$10M	\$15M	Financial value of investment by public, private and non-governmental organizations and stakeholders in the dairy sector as a result of the project
Number of CLARITY related collaborative activities(workshops, conferences, seminars)	CUST	0	1	1	5	5	TBD	Collaborative Activity - results to be collected by CDP M&E staff and OCDC
Number of METRICS related collaborative activities (workshops, conferences, seminars)	CUST	0	0	0	4	5	TBD	Collaborative Activity - results to be collected by CDP M&E staff and OCDC
Number of IMPACT related collaborations (workshops, conferences, seminars)	CUST	0	0	0	2	3	TBD	Collaborative Activity - results to be collected by CDP M&E staff and OCDC

Section A: PPR of Reporting Indicators

Listed in table above.

Section B: Key issues in CD3

Capacity Building:

Sustainable Institutional Capacity Development (SCD)

The CD3 project implemented currently in Kenya and Uganda has a common goal of building the capacity of cooperatives as well as unions that promote horizontal and vertical linkages. Land O'Lakes will continue to ensure the involvement of leaders, staff and member in business planning and capacity building initiatives in order to mitigate the effects of turnover on the organization. Furthermore, by engaging development partners and commercial input and service providers in our work and in IDEA, and disseminating knowledge through our learning platform, we will ensure that tools, resources and services are widely dispersed. In this aspect, LOL will use experienced persons in cooperative management and governance issues to train the leadership of those units/cooperatives working with the program to enable them realize the profitability at their level of operation. A major cooperative legal enabling environment conference will be held in the third year of the program presenting a synthesis of the work conducted in various countries, reports on the achievements and failures and analysis of what can be learned from the accumulation of this experience and recommendations developed on the possibility for further work in this area. It is expected that this event would be held in conjunction with international cooperative development institutions and would be promoted as a contributing activity in recognition of the UN Year of International Cooperation in 2012.

Trade Capacity Building (TCB)

CD3 program will build the capacity of the local institutions which have invested in vertical integration, the value addition of raw inputs. This will involve the promotion of activities that improve quality standards at all levels in the entire dairy value chain including human resources systems strengthening, good governance improvement, and services development. The program is exploring the export of raw materials used for making animal feeds from Uganda to Kenya between the two cooperatives working with the CD3 program. This business linkage is one of the areas that will be emphasized especially among different partners from different countries.

Research, Science, technology and Innovation

Applied Research (APR)

The CDP project is utilizing data and knowledge obtained during an extensive baseline data collection activity to identify and understand the socio-economic benefits that dairy farmers receive from membership in a horizontally and/or vertically integrated cooperative. The knowledge generated from this research will be applied to enhance the value that cooperatives provide their members, in turn increasing the patronage of members to the cooperative, and therefor increasing cooperative revenues.

Agriculture and Food Security:

Dairy: The goal CD3 project will contribute substantially to achieving the vision of the U.S. Agency for International Development's (USAID) Cooperative Development Program (CDP),

to create partnerships that contribute to self-reliant cooperative enterprises that meet the evolving needs of their members and improve the quality of members' lives, of their communities and of their nations. It will achieve food security objective by expanding the sales of highly nutritious milk and dairy products so as to increase the economic benefits to rural, smallholder dairy farmers in East Africa will support USAID's Food Security objectives of reducing poverty, hunger and malnutrition. In the countries where CD3 works, dairy has been regarded as the most important enterprise that contributes to increased incomes and reduction in poverty at the local level. It is expected that through use of technologies and enhanced governance structure in cooperatives/unions, there will be improved income earned by members of such institutions hence would result in better living conditions.

Economic Opportunity:

Labor and Employment (LAE)

Creation of jobs along the dairy value chain will be an added advantage during the implementation of the CD3 project. These jobs will assist in alleviating poverty as well as food security to some levels. It is envisaged that with proper functioning of the unions/cooperatives in these areas as a result of improved profitability, there will be more people benefiting in terms of employment. These will include jobs created at the farm level, coop level, union level, and processor level as well as in the transport sector.

Youth Development (YDV)

Youth programs will be incorporated in all CD3 activities. As has been done in other LOL dairy programs, this project will be implemented with youths in mind. The youth will be engaged in the provision of services along the entire value chain. These will include transportation, clerical works at the coop, measurement of milk, provision of inputs among others. This Key Issue cuts across all SPS Objectives

Gender and Women's Programs

Gender Equality/Women's Empowerment-Secondary

The program will emphasize gender access and involvement, especially when it comes to decision-making in all CD3 programs. During the implementation, the program will pay particular attention to gender concerns and effects corrective action as appropriate. CD3 will take into account the varying roles, assets, knowledge and skills that men, women and youth bring to dairy farming. The program therefore will facilitate the implementation of opportunities for integrating youth and family members into dairy value-chain economic activities.

Section C: Success Stories

See Appendix D

Section D: Mid-Term Evaluation

Land O'Lakes will conduct the mid-term evaluation late in September 2012 as the baseline activity was only recently completed and the mid-term will be most helpful once there are activities underway. The mid-term will take place prior to expansion into other countries so will only include Kenya and Uganda.

Kenya: ACDI/VOCA, Land of Lakes and NCBA are the CDO partners implementing CDP programs in Kenya. The group is in discussions with a vendor, Keystone, regarding how to collaborate and all use Keystone for the mid-term in Kenya. The intention is that collectively the CDOs will receive (anonymous) comparisons of performance that help each organization to identify where they are doing comparatively well and comparatively not so well. For each criterion there is a benchmark for participating organizations to use in assessing strengths and weaknesses. The intention is to test a model of collaborative evaluation among members in this group which can hopefully be replicated for future evaluations.

Uganda: Land O'Lakes will use a traditional mid-term evaluation model in Uganda, Completeness: all annual work plan objectives identified and actual achievements presented (including objectives related to collaborative activities and to dissemination of results within and beyond CDO and cooperative development community;

1. Documentation: assertions regarding performance, external conditions, corrective actions, etc., must all be documented with clear references to source documentation or records and the reliability of those records;
2. Identification of reasons for success and reasons for shortcomings;
 - a. Design/strategy
 - b. Assumptions
 - c. Personnel
 - d. Foreseen/unforeseen external factors
 - e. Other
3. Clear statement of corrective actions taken/to be taken
4. Clear statement of lessons learned and how these will be applied in future CDP and other cooperative/development projects.

There is no specific budget line for the midterm evaluation; therefore, there will be a reduction somewhere else in the budget to provide for the expense.

Section E: Data Quality Assessment

The information reported in this PPR in December 2011 has been authenticated by the monitoring and evaluation unit of the CD3 program. The reported data were collected by experienced Monitoring and Evaluation staff in accordance with the project Performance Monitoring Plan which was approved by USAID, during the baseline survey in 2011, when targeted beneficiaries identified beforehand were contacted and interviewed. A thorough quality assurance process was maintained during data collection that included using experienced and well-trained data collectors.

PDA devices (Personal Digital Assistant Devices) were utilized to collect household level baseline data. The use of PDAs increased data collection accuracy by reducing data collection error, increasing data consistency, and by increasing the traceability of data over time. The use of PDAs also allows the CDP project to maintain digital data storage in multiple countries (Uganda, Kenya and United States). Secondary data were collected from cooperative documents which were provided and verified with the management teams of the cooperatives. These data were validated through key informant interviews and spot checks by the team of consultants in each area the project works. Personal details of key informants who provided information have been recorded in the project database for further follow up or ongoing validation.

Another area that the project has invested in for data quality assurance is in the storage of data records. Completed survey forms have been kept in our data storage management system in Kenya. Audio files of key informant interviews are kept electronically on a password protected M&E computer, following Land O'Lakes data storage and security protocols. The M&E team maintains a well-organized data library for both primary and secondary data used, the data sources, qualitative and quantitative data (raw and processed data), data collection methodology and well as data collection tools.

Appendix C: Dissemination – Abstract #1

Abstract submitted to: The Society for the Advancement of Socio-Economics, annual conference at MIT in Cambridge, Massachusetts, June 28-30, 2012. Theme: "Global Shifts: Implications for Business, Government and Labor."

Listening First: Incorporating Indigenous Social Capital in a Small Holder Vertical Integration Business Model: A Dairy Co-operative Project in East Africa
(Abstract)

As Joseph Stiglitz points out, policy-makers often fail to effectively utilize indigenous social capital. Neo-classical economists may see indigenous social capital as a barrier to efficient markets. Alternatively, international development workers may see economic liberalization as a threat to existing social relationships that provide indigenous populations with material, emotional and spiritual support.

A five-year USAID Cooperative Development Program – three sites in Kenya and one in Uganda - led by Land O' Lakes International Development will empirically identify the structural conditions and processes that enhance or block utilization of indigenous social capital in sustainable business models.

The year one baseline was developed by an inter-disciplinary team of experts in business plan assessment, agricultural economics, rural sociology, and small producer dairy cooperative development in emerging economies. Sample surveys of households and focus groups, in-depth interviews with co-operative boards, and review of current business plans provide quantitative and qualitative indicators of actual as well as potential bridges and barriers between indigenous social capital and the realization of competitive business models. These observations are sensitive to life cycle history, external market and institutional environments, and household characteristics that vary from one cooperative to another.

The baseline data was used to identify strategies for more effective utilization of indigenous social capital in a sustainable business plan. The project will measure the actual effectiveness of these strategies in the third and fifth years of the project and discuss their implications for organizational models to facilitate the integration of small-scale producers into the global economy.

Appendix D: Success Story

Success Story

Listening and Learning: Baseline that Drives the Project Design

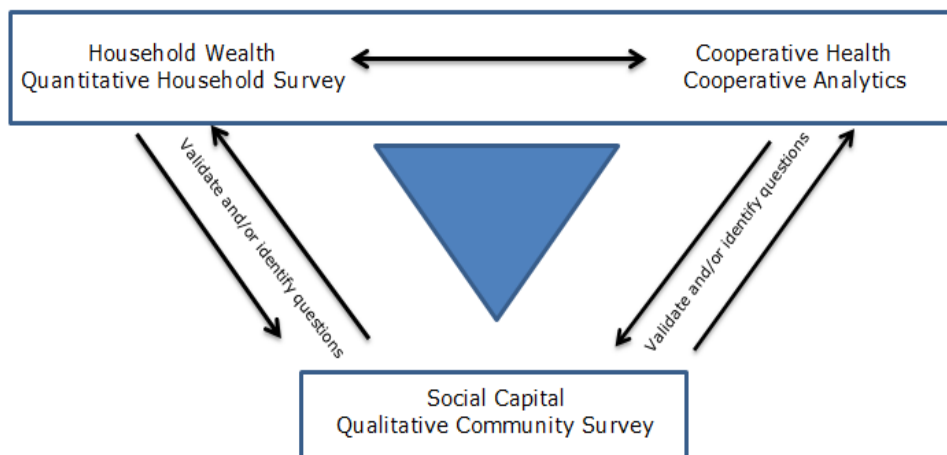
Boards of Directors, senior management, development organizations and government officials all expressed an understanding that farmer members of dairy cooperatives 'side-sold' milk into other sales channels, although a requirement of members in the cooperative as stated in the bylaws is to sell all milk to the cooperatives. If farmers are 'side-selling' milk, this has obvious implications for cooperatives that are investing in processing and need guaranteed volumes to meet production demand. Results of the comprehensive baseline conducted by Land O'Lakes in Cooperative Development Project (CDP) have dispelled this myth. In actuality farmer members 'side-sell', on average, less than 8 percent of the milk produced at their farm. The remainder, 92 percent, is sold to the cooperative or consumed within the home – this is during the dry season, when side selling is believed to be highest.

The Cooperative Development Project (CDP) utilized a rigorous baseline data collection activity to listen and learn from its four dairy cooperative partners representing over 60,000 dairy farmer members. Their farmer members and the farmer nonmembers found within the cooperatives' geographical areas. With this knowledge CDP is able dispel common myths, such as member side-selling, and validate development rational. For example, a key development rational for the CDP project is the importance of women in dairy farming and milk marketing. CDP found that 62 percent of member households headed by women cite dairying as their primary source of income, 16 percent higher than male headed households – demonstrating the importance of dairying activities to woman in the region.

"My cow is like my second husband because I rely on it financially for all my needs."

–Lari Dairy Alliance Focus Group Member

The quantitative survey conducted at the household level was designed to capture household wealth; information about the characteristics of dairy farmers' households and farms. The sampling strategy would need to be large enough to demonstrate a 30% increase in HH income by the end of the project, and Land O'Lakes wanted to measure differences between milksheds and differences between members and non-members. The total sample required was about 650 from each group (member/non-member) in each of the three



representative milksheds, therefore the total sample included over 3900 households. A second phase of the baseline included cooperative-level review. A mixed-method approach was used for understanding the enabling environment that described the history and current processes in the cooperatives, experts assessed 5 key areas; governance, finance, policy, operations, and social factors. The household and cooperative level surveys link together very well and provide in-depth knowledge of the cooperative and the environment in which it works. The team collected a third level of data to explain some of the outstanding 'how' and 'why' questions unanswered by first two phases of the baseline. This third community level data used a collection of qualitative tools to understand details of household production choices, household decision making, and milk marketing choices. The team also used participatory rural appraisal techniques to understand changes in income sources over time and across seasons, and finally used another qualitative instrument to begin to assess social capital and identify those trusted and important relationships in a community that relate to their dairying activity.

The rigorous baseline identified different needs across each cooperative which formed the bases for the cooperative specific capacity building that the CDP project will offer. The baseline provided a platform for listening and learning, including the cooperative partner in the process of validating our findings. The information has proven useful for cooperative managers and allowed us to design a project that targets needs that will improve these businesses and confirmed by the extent to which our top level project goals are met – increase household income, increase revenue at the business level, and disseminate key learnings and findings.

The data allows for cooperatives to make changes in the kinds of services they provide. For example one cooperative level and household survey results indicated that trainings provided do have a direct impact on production and income. Other cooperative membership, however, did not show those same results. Cooperative can use this information to rethink service provision and training programs to provide knowledge that result in measurable improvements in household dairy activities.

Appendix E: Econometric Modeling – Preliminary Results

Effect of Training on Dairy Farm Production – Econometric Model

The intention of dairy training (across a variety of dairy specific technical areas) is to increase the efficiency of dairy farming, ultimately improving productivity and profitability. It is important for the Land O'Lakes Cooperative Development Project (CDP) to identify the effectiveness of its cooperative partners training strategies. Evaluating the effectiveness of cooperative training techniques will inform the structure of CDP's action items scheduled for implementation in year two through five of the project. A measure of cooperative training techniques is to compare the apparent effectiveness of training between cooperative members and their nonmember counterparts.

The first step at identifying any differences in training quality between cooperative members and nonmembers is to undertake a descriptive analysis of summary statistics. Cooperative members avail of dairy training opportunities much more frequently than their nonmember counterparts, with 59 percent of members stating they have received some type of training in the previous three years. Significantly fewer nonmembers obtained dairy training, with only 24 percent of nonmembers receiving any type of dairying training over the previous three years (Table E2). This trend remains across seven areas of dairy training, with a higher percentage of cooperative members receiving dairy training than nonmembers in each area (Table E2). Three training areas had a relatively high demand; improved feed practice training, animal health training, and artificial insemination training (Table E2). Yet, in each area a significantly higher percentage of cooperative members obtained training than nonmembers.

Table E1 contains data representing the average current daily production (litters per day) per milk giving cow across the CDP data set. This data is disaggregated across CDP cooperative partner milkshed, across cooperative members and non-members and between households that have received any type of dairy training in the previous 3 years and those that have not. T-tests are used to identify if a statistical difference in mean is present across groups that are homogeneous in Milkshed and member status (but not in training status). For example, non-member households found in the Lari milkshed area who have received dairy training have an average production per cow of 10.16 liters per cow per day, where nonmembers who have not received dairy training have an average production of 8.97 Lt/cow/day. Yet there is no statistical difference in the mean production per cow across the two groups. The only sub-sample with a statistically different means is UCCCU nonmembers, where households that have received training having statistically different (and higher) mean production per cow than household to not receive dairy training.

Contrary to expectations, members that have received dairy training do not have significantly higher production per cow. In some milksheds there is virtually no difference in production between members who have received training and those who have not received training. While not statistically different, there is trend in the marginal differences across Table E1.⁴ Most notably the marginal difference in means between nonmembers who have received training and nonmembers who have not received training is larger than the difference in means between members who have received training and members who have

⁴ A table of Income from Dairying activities, disaggregated by milkshed, member status, and training reveals nearly identical outcomes. Cooperative members who have obtained training do not have greater dairying income than those that have not obtained training, while nonmembers to obtain training have a significantly larger income from dairying activities.

not in each cooperative milkshed area, with the exception of Meru. Considering the relative difference in the amount of dairy training received by cooperative members than nonmembers this lack of increased processing is surprising, and suggests that trainings offered to cooperative members may not be effective. Members may not be putting newly acquired skills to practice, or the trainings may not be conveying the skills well.

To measure the apparent difference in the effectiveness of training across cooperative members and nonmembers regression analysis is utilized. The below model is estimated using OLS, while correcting for heteroskedasticity.⁵

$$Y_i = \beta_1 \text{Membership}_i + \beta_2 \text{Training}_i + \beta_3 (\text{Membership} * \text{Training})_i + \beta_4 X_i + \epsilon_i$$

Y_i is production per cow (liters per day), *Membership* is a dummy variable taking the value of one (1) if the head of household is a cooperative members and zero (0) otherwise, *Training* is a dummy variable taking the value of one (1) if the household has received any dairy specific training over the previous 3 years, and zero (0) otherwise, *Membership*Training* is an interaction term to capture any difference in effect of membership and training production per cow and X_i is a vector of control variables. The control variables include: demographic (age, gender, education, household size), farm (hours spent dairying, dairy is the primary income, cost of dairying inputs) and regional controls (dummy variables controlling for unobservable difference across milksheds).

The regression results found in Table E3 are aimed to explore the possible answers to the below questions:⁶

1. Does dairy training have a positive effect on dairy production (measured as daily productivity per cow)?
2. Does the effect of dairy training on dairy production differ between cooperative members and nonmembers?

Table E2 contains the regression results of the above estimated model. The primary variables of interest are Cooperative Membership, Received Dairy Training and the interaction of these two variables. Specification one (1) in Table E2 identifies a statistically significant and positive correlation between dairy training and production per cow. This relationship remains positive and significant throughout all four specifications and is inline with traditional human capital theories, which state an increase in training/knowledge/ability is correlated with increased productivity. Specification two (2) includes the interaction term between cooperative membership and dairy training. Specification three (3) and four (4) go on to include a vector of demographic control variables and a vector of dairy production control variables. Also included in specification four (4) is a regional control for $n-1$ milksheds found within the data set to control for unobservable milkshed specific characteristics.⁷

⁵ Analysis was completed using STATA (version 11) and SPSS (version 19)

⁶ A primary required assumption is dairy training received by cooperative members is in conjunction with, or via, the cooperative organization. Making this assumption allows us to evaluate the effectiveness of trainings offered by the cooperative in comparison to other (non-cooperative) dairy trainings provided within the associated milksheds.

⁷ Limuru milkshed is captured in the intercept beta coefficient.

Table E1: Production per Cow (Disaggregated by Member Status and Dairy Training)

Federated		Production Per Cow (Current	
Cooperative/Alliance	Member Status	Training Status	L/Day)
Lari	Nonmember	No Dairy Training	8.9706
		Received Dairy Training	10.1608
		Total	9.2393
	Member	No Dairy Training	9.8999
		Received Dairy Training	9.8025
		Total	9.8347
Meru	Nonmember	No Dairy Training	7.2080
		Received Dairy Training	8.0505
		Total	7.4650
	Member	No Dairy Training	6.8970
		Received Dairy Training	7.8163
		Total	7.4554
UCCCU	Nonmember	No Dairy Training	4.4549
		Received Dairy Training	5.6802**
		Total	4.6928
	Member	No Dairy Training	5.1073
		Received Dairy Training	5.7058
		Total	5.4111
Limuru	Nonmember	No Dairy Training	7.8361
		Received Dairy Training	9.0515
		Total	8.1721
	Member	No Dairy Training	8.9290
		Received Dairy Training	9.0524
		Total	9.0008
Total	Nonmember	No Dairy Training	6.8728
		Received Dairy Training	8.1293

		Training	
		Total	7.1784
Member		No Dairy Training	7.1375
		Received Dairy	8.0383
		Training	
		Total	7.6723
*** p<0.01, ** p<0.05, * p<0.1 (for Levene's Test for Equality of Variances)			
n=4075			

Table E2: Training Received Previous 3 Years (As a percentage of Membership Status)

	<u>Nonmember</u>	<u>Cooperative Member</u>
Improved Feed Practice Training	21%	52%
Animal Health Training	14%	34%
Artificial Insemination Training	10%	28%
Heard Management Training	10%	22%
Accounting Training	2%	8%
Cross Visit Usage	2%	5%
Other Trainings	2%	3%
<i>Any Training Received</i>	24%	59%
	n= 2097	n=2246

The results from specification four (4) in Table E2 indicate that there is a positive and significant effect of dairying training on milk production⁸. These results suggest that receiving some type of dairying training increases average milk productivity per cow (per day) by one liter. Interestingly the effect for cooperative members that receive training is much less. The effect of dairy training on production per cow is still positive for cooperative members, yet it is 20 percent less than that of nonmembers.⁹ This is represented by the statistically significant and negative coefficient on the (Member)*(Dairy Training) variable.

A possible interpretation of these results is cooperative organizations are providing trainings that are less effective than trainings provided by non-cooperative organizations. An additional explanation may be cooperative members attend trainings which they may not demand – therefore they are not completely interested in the trainings content. This may be to avail of per-diems or because of social pressure from the co-members. This can be further highlighted by qualitative data that suggests cooperative members are rarely asked to contribute a financial contribution to attend dairy trainings. In contrast, nonmembers rarely are provided per-diems for attending trainings and in some cases are required to pay a training fee. These results suggest that funds spent by cooperative organizations on dairy specific trainings can be spent more strategically and efficiently. This is further emphasized by the fact that far more cooperative member households are availing of training (perhaps because of the relatively lower cost) than nonmembers.

The model found in table E3, and its associated specifications, used current farm level production per cow as the dependent variable. This data was calculated from farm level survey questions such as number of milk providing cows and estimated current daily and weekly production levels. In addition to current production levels the survey inquired about production levels during the rainy and dry seasons. The latter questions required the respondent to estimate output from previous time periods; therefore the responses to these questions are may be less accurate. As a robustness check the model using specification 4 from Table E2 was estimated using dry and rainy season production levels as the dependent variable. The results are found below in Table E4. While not statistically significant, the results are consistent with the results found in Table E2, most notably the positive effect of dairy training and the significantly less positive (and in the below estimations negative) effect of dairy training for cooperative members.

⁸Equally there is statistically positive correlation between cooperative membership and milk production, however we refrain from suggesting a causal effect in this case because of causal directionality is more difficult to identify between production per cow and cooperative membership than between dairy training and production per cow.

⁹ The effect of dairy training on production per cow for nonmembers is 1.007 liters (the coefficient on training in specification 4. The effect of dairy training on production per cow for members is equal to the summation of the coefficients on Cooperative membership, Received Dairying Training and their interaction variable, or 0.806.

Table E3: Dependent Variable: Current Daily Production (Per Cow)
Estimated with OLS, correcting for heteroskedasticity.

Independent Variables	Specification(s)			
	(1)	(2)	(3)	(4)
Cooperative Member (D)	0.128 (0.146)	0.265 (0.187)	0.434** (0.187)	0.496*** (0.180)
Received Dairy Training (D)	1.045*** (0.148)	1.256*** (0.230)	1.079*** (0.221)	1.007*** (0.215)
(Member)*(Dairy Training)		-0.356 (0.300)	-0.455 (0.288)	-0.697** (0.281)
Household Size			-0.136*** (0.0324)	0.00104 (0.0182)
Education (HHH)			0.422*** (0.0365)	0.287*** (0.0355)
Age (HHH)			-0.0134*** (0.00464)	-0.0149*** (0.00447)
Dairy Hours Worked (HHH)			-0.0157 (0.0166)	0.0186 (0.0135)
Male (D)			0.522*** (0.160)	0.684*** (0.154)
Dairy is Primary Income (D)			0.540*** (0.155)	0.472*** (0.135)
Number of Milk Giving Cows			-0.0154* (0.00844)	-0.00225 (0.00438)
Fodder Cost (USD)				8.86e-05 (5.42e-05)
Animal Medical Cost (USD)				0.000268 (0.000184)
Animal Feed Cost (USD)				9.56e-05 (0.000115)
Farm Labor Cost (USD)				3.43e-05 (5.56e-05)
Lari Milkshed Area (D)				0.627** (0.314)
Meru Milkshed Area (D)				-1.328*** (0.310)
UCCCU Milkshed Area (D)				-3.609*** (0.332)
Constant	6.924*** (0.103)	6.873*** (0.110)	6.488*** (0.373)	7.158*** (0.442)
Observations	4,075	4,075	4,054	3,769
R-squared	0.016	0.016	0.098	0.219

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table E4: Estimated with OLS, correcting for heteroskedasticity.		
Dependent Variables:	Daily Production Per Cow (Dry Season)	Daily Production Per Cow (Rainy Season)
Independent Variables		
Cooperative Member (D)	22.78 (24.34)	30.41 (31.81)
Received Dairy Training (D)	10.51 (6.555)	12.38 (11.54)
Coop Membership)*(Dairy Training)	-30.28 (22.51)	-42.71 (30.16)
Household Size	1.229 (1.913)	-1.469 (1.752)
Education (HHH)	-1.903 (1.668)	-4.604 (3.066)
Age (HHH)	0.0726 (0.0802)	0.254 (0.356)
Dairy Hours Worked (HHH)	-0.417 (1.189)	0.168 (1.833)
Male (D)	8.805 (7.535)	18.92 (11.80)
Dairy is Primary Income (D)	-11.35 (11.80)	-21.80 (16.23)
Number of Milk Giving Cows	-0.114 (0.110)	-0.0550 (0.156)
Fodder Cost (USD)	-0.000744 (0.000493)	-0.000977 (0.000858)
Animal Medical Cost (USD)	-0.0127 (0.00809)	-0.0188* (0.0112)
Animal Feed Cost (USD)	0.000250 (0.000340)	8.49e-05 (0.000344)
Farm Labor Cost (USD)	-0.000846 (0.000619)	-0.000901 (0.00107)
Lari Milkshed Area (D)	4.184 (2.901)	6.255 (3.921)
Meru Milkshed Area (D)	-1.497 (1.719)	-2.977 (2.342)
UCCCU Milkshed Area (D)	17.83 (24.80)	43.38 (34.49)
Constant	0.433 (10.10)	9.880 (11.08)
Observations	3,752	3,748
R-squared	0.003	0.005

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1